Materials Compatibility of the Chimney Camera Intrusions -Issues and Plans -

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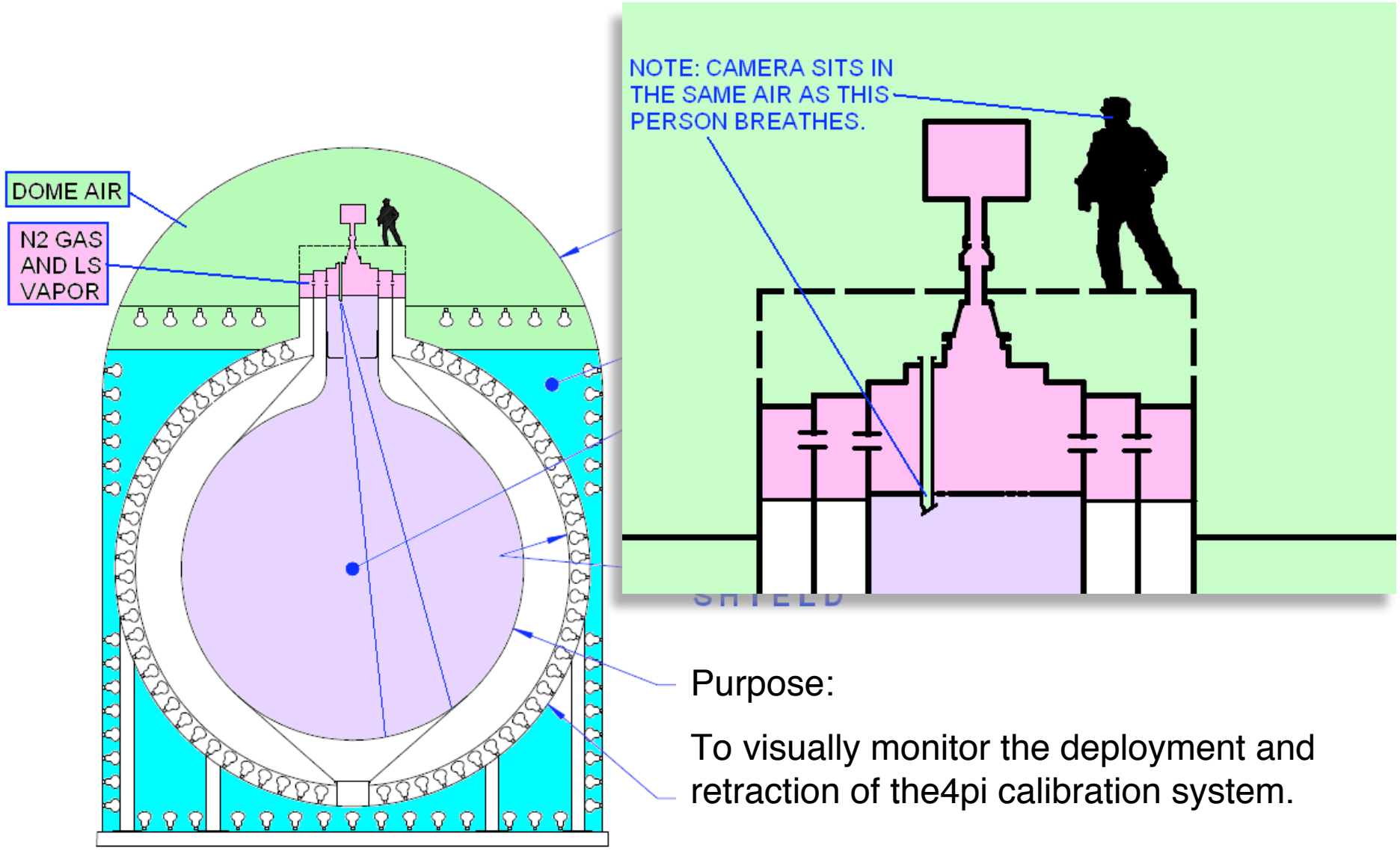
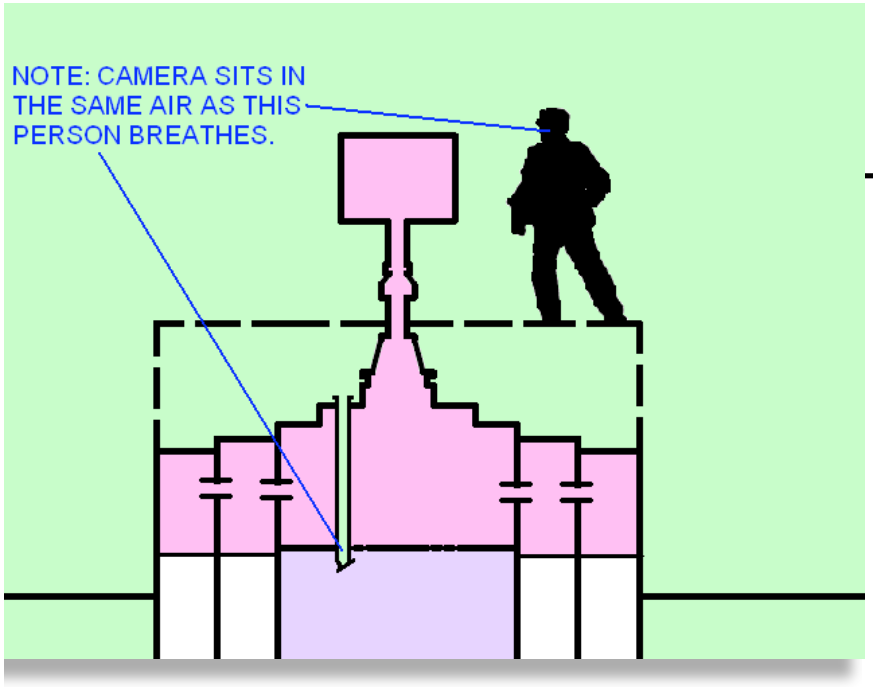
Chimney Monitoring Cameras



Purpose:

To visually monitor the deployment and retraction of the4pi calibration system.

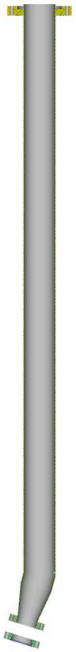


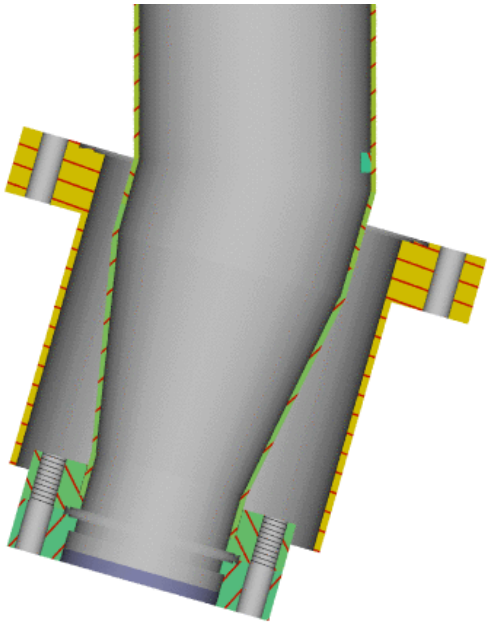
Materials Issues

To be immersed in LS, or not?
What are long-term effects?

Standard MDC window
(covlar glass-to-stainless weld)
Custom MDC window
(gold glass-to-stainless weld)

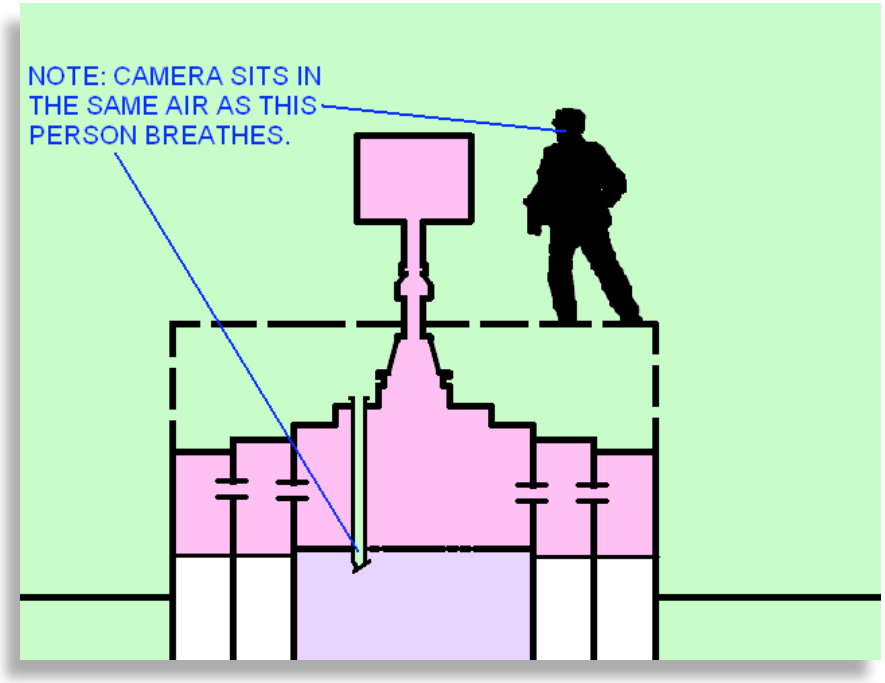
Or, custom design?

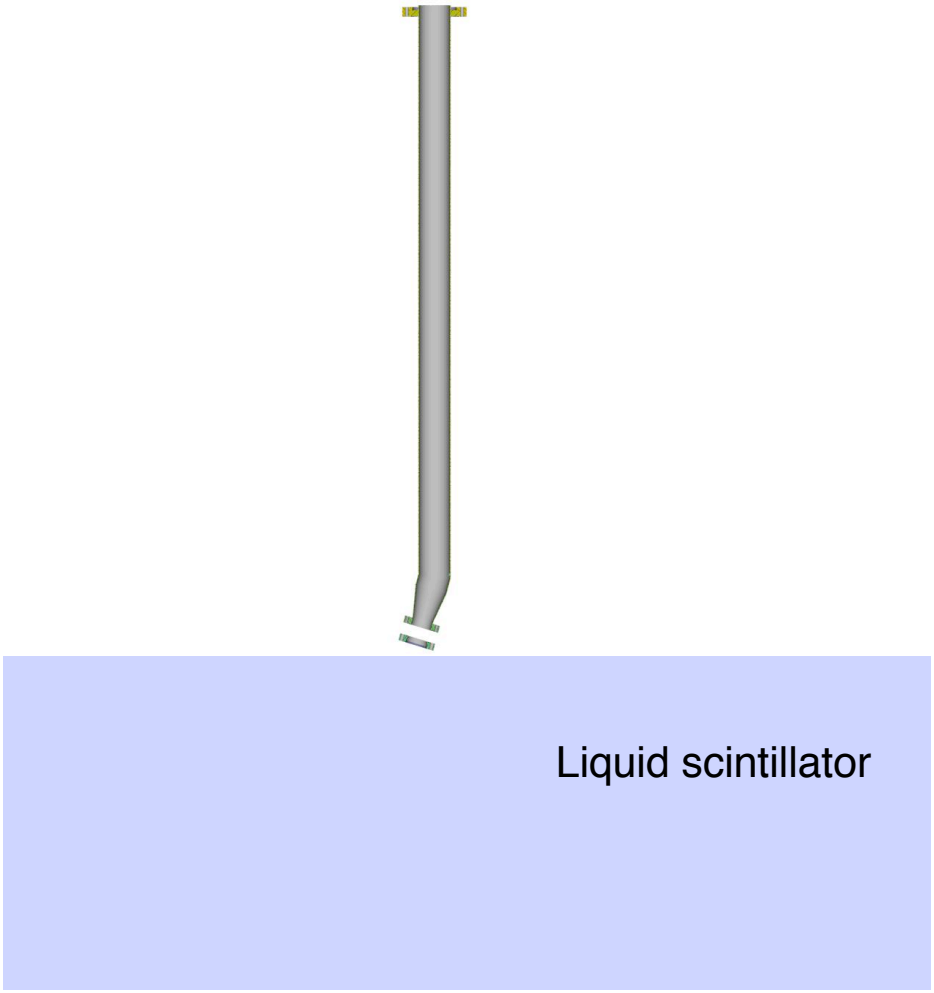




Step 1

Deploy camera intrusion into gas volume only and try it. If we need to deploy into LS we can always extend tube.



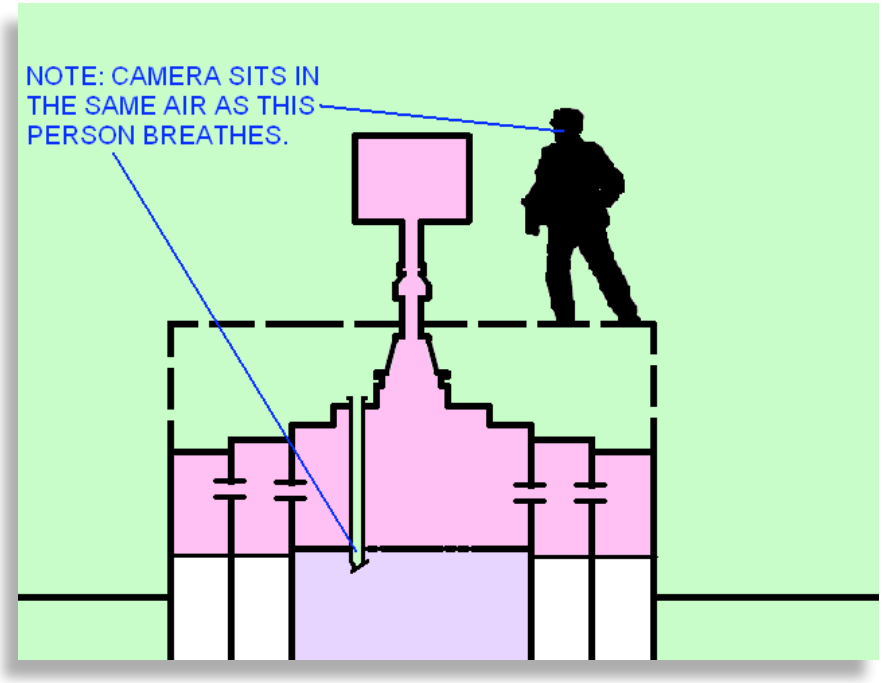


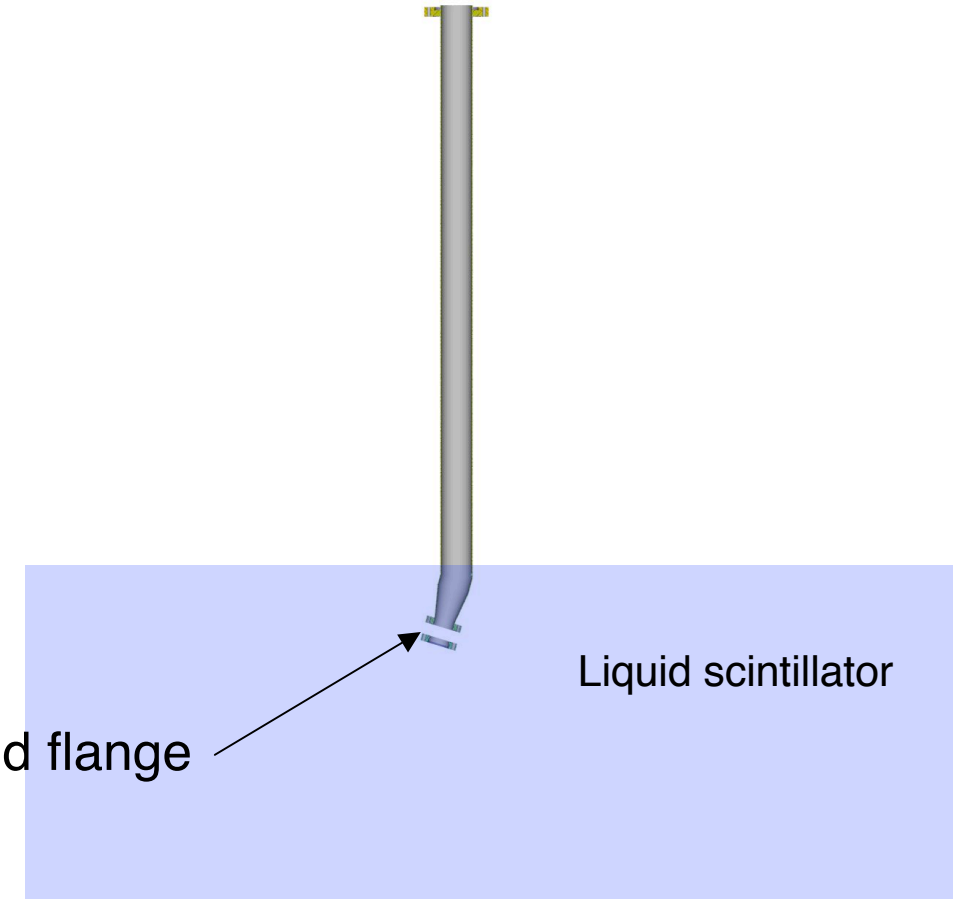
Note: neck PMTs provide precedence for intrusion into gas volume.

Step 2 - Option 1

Deploy camera intrusion into LS volume with MDC window and welded flange.

-> requires long-term LS test for MDC window.

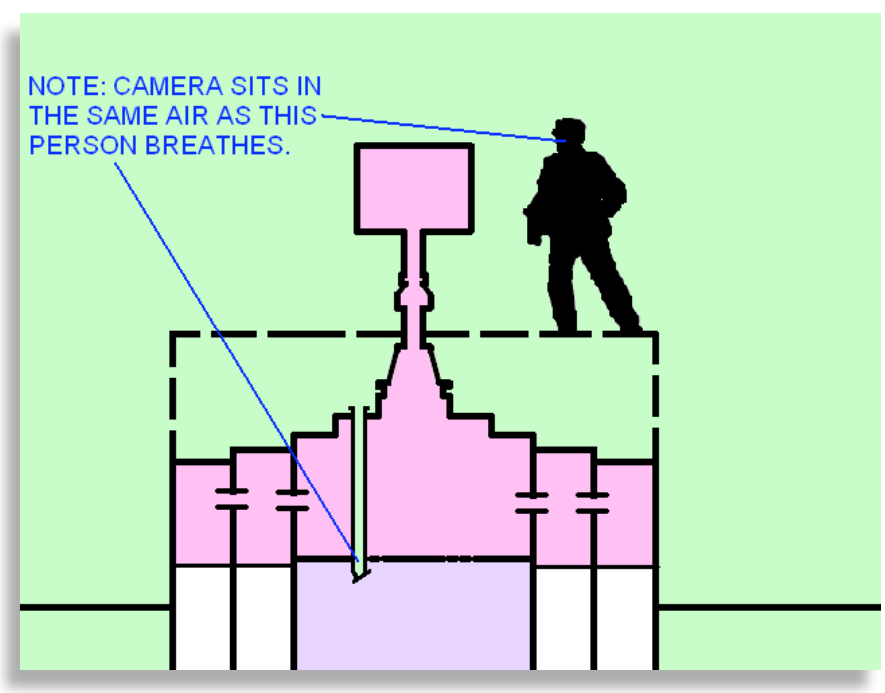


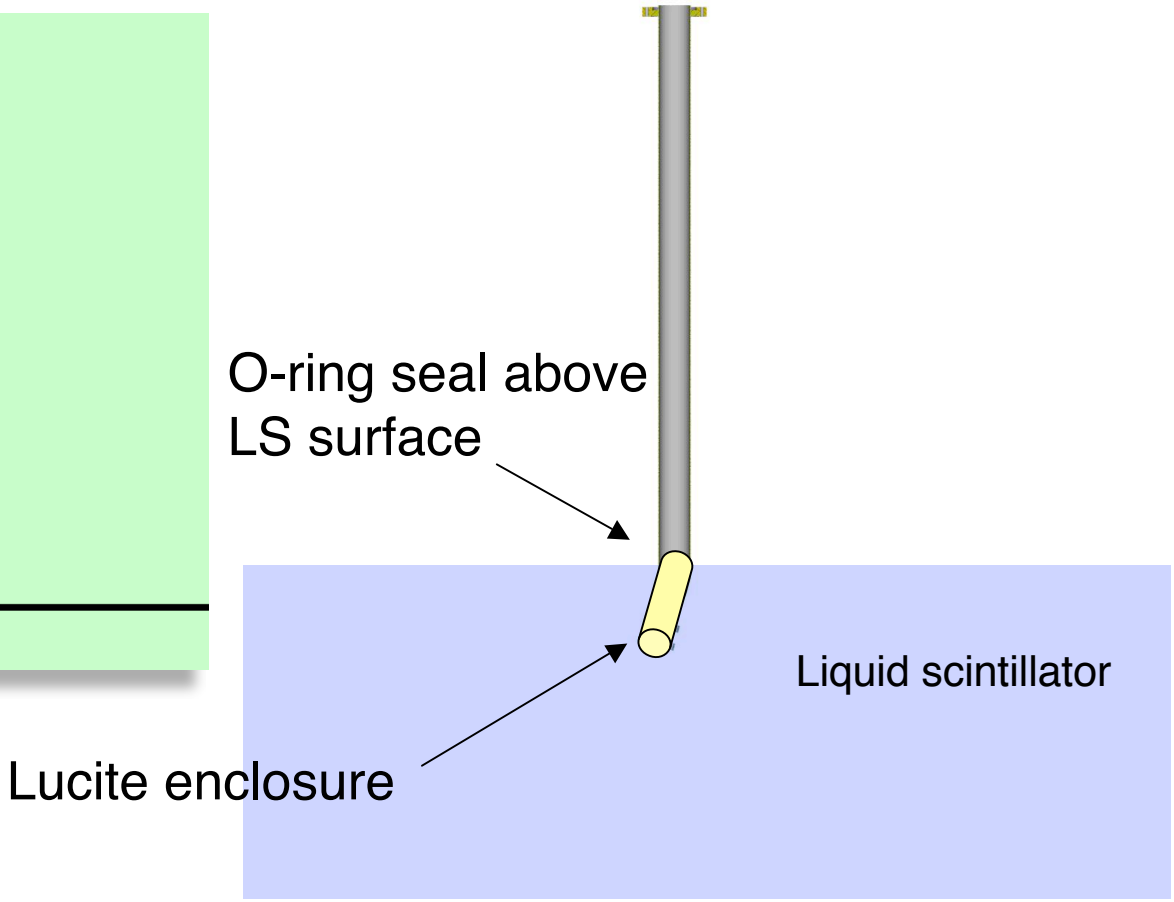


Step 2 - Option 2

Deploy camera intrusion into LS volume with custom lucite enclosure. (Kishimoto's idea)

-> requires machining of custom lucite enclosure





The Next Steps

- Have already procured standard MDC window, will start soak test soon. (LBNL+Mozumi)
- Will inquire about availability of custom MDC window with gold weld. (LBNL)
- Complete design of camera intrusions and provide drawings. (LBNL)

- Select cameras and develop readout system. (KSU)
- Perform illumination tests. (LSU)

Final Note: Chimney monitoring cameras will be very useful but should not hold up installation of the 4pi system.